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650 Town Center Drive  
Suite 1600  
Costa Mesa, California 92626-7130  
(714) 540-8700

Facsimile: (714) 540-9823

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**TO:** Examiner C. Stulberger  
Group Art Unit 2132**FROM:** Michael K. O'Neill**RE:** U.S. Application No. 09/411,070  
Atty. Docket No. 03630-000229**FAX NO.:** (703) 872-9306**DATE:** June 23, 2005**NO. OF PAGES:** 6  
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Attached is a Response to the Office Action dated March 31, 2005.

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03630.000229

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of: )  
: Examiner: C. Stulberger  
ROYCE E. SLICK, et al. )  
: Group Art Unit: 2132  
Application No.: 09/411,070 )  
: Filed: October 4, 1999 )  
: For: TARGETED SECURE )  
PRINTING : June 23, 2005

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Sir:

This is a Response to the Office Action dated March 31, 2005. Claims 1 to 104 and 122 to 140 are pending in the application. Reconsideration and further examination are respectfully requested.

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All claims were rejected under 35 U.S.C. § 103(a), primarily over U.S. Patent 6,385,728 (DeBry) in view of an excerpt from pages 357 and 358 of "Applied Cryptography, Second Edition" by Schneier (hereinafter "Schneier"). In entering rejections of certain ones of the dependent claims, reliance was also placed on U.S. Patent 5,633,932 (Davis) or U.S. Patent 6,226,618 (Downes). The rejections are all respectfully traversed.

As explained in prior responses, the invention involves a double-encryption using first and second pairs of private-keys/public-keys. According to one feature of the invention, the private-key of the first private-key/public-key pair is primarily in the sole possession of an intended image output device, whereas the private-key of the second private-key/public-key pair is primarily in the sole possession of the intended recipient of the image. One advantageous effect of this feature is an added degree of assurance in a secure printing environment: since the first private-key is primarily in the sole possession of the intended image output device, there is assurance that a print job could not successfully be intercepted by an unintended image output device; and since the second private-key is primarily in the sole possession of the intended recipient of the image, there is assurance that an unauthorized person could not obtain the printed image even if he successfully obtained access to the intended image output device.

In entering the rejection over DeBry in view of Schneier, the Office Action conceded that DeBry does not disclose double encryption using a second key, wherein the private key of the second key is a public key of a second private-key/public-key pair, and wherein the second key is primarily in the sole possession of the intended recipient of the

image. Reliance was placed on Schneier for this feature of the invention, but Applicants respectfully submit that such reliance is misplaced.

It is true that the Schneier article describes a double encryption, in which a plain text block is encrypted twice with two different keys. However, as seen by the Applicants, even in the proposed combination of DeBry and Schneier, there is nothing that discloses or suggests that the private key of a first private-key/public-key pair is primarily in the sole possession of an intended image output device, whereas the private key of the second private-key/public-key pair is primarily in the sole possession of the intended recipient of an image. Rather, as understood by Applicants, Schneier's double encryption technique relies on a pair of keys that are in the possession of precisely the same entity, and not in the possession of respectively different entities as set forth in the claims herein.

As such, the most that can be said of the hypothetical combination proposed by the Office Action is that it would result in an arrangement much like that described at column 13 of U.S. Patent 5,956,407 (Slavin) over which a previous rejection has been withdrawn, in which there is a double encryption process, but in which the private keys are both in the possession of the same entity.

Moreover, the Schneier article very clearly discourages the use of double encryption, at least the double encryption technique proposed therein. For example, at page 357, Schneier states that double encryption "is not smart". At page 358, Schneier is unequivocal in his statement that "double encryption is not worth anything". These statements by Schneier are so unambiguous that it is difficult to imagine a clearer example of a "teaching away". See MPEP §2141.02:

"A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention". (page 2100-127, emphasis in original).

In fact, Schneier's unambiguous statements about the disadvantages of double encryption are believed to provide evidence of non-obviousness which tends to refute the rejection under § 103(a) rather than to support it. See MPEP § 2145 (X)(D)(3), page 2100-162.

In any event, as Applicants see it, these statements by Schneier are probably accurate in consideration of the specific technique for double encryption that is contemplated by Schneier, since in Schneier's technique both keys are held by precisely the same entity, and not different entities as in the invention. For Schneier, because both keys are held by the same entity, a "meet-in-the-middle" attack destroys any apparent benefit from this "naive way" of double-encryption. However, in the context of the invention where different entities are primarily in the sole possession of their respective private keys, there is an advantageous effect not found in the art. Specifically, and as discussed above, there are added assurances of authentication and authorization in a secure printing environment: since the first private key is primarily in the sole possession of the intended image output device, there is assurance that a print job could not successfully be intercepted by an unintended image output device; and since the second private key is primarily in the sole possession of the intended recipient of the image, there is assurance that an unauthorized person could not obtain the printed image even from an intended image output device. Thus, in the invention, the advantage does not necessarily reside solely in

increased encryption security; rather, there are also advantages related to authentication and authorization that are nowhere discussed in the applied art.

Accordingly, in view of Schneier's explicit statements that discourage double encryption, coupled with the advantageous effects when double encryption is used according to the invention, it is respectfully submitted that the invention would not have been obvious from any permissible combination of the applied art.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



Michael K. O'Neill  
Attorney for Applicants  
Registration No. 32,622

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3800  
Facsimile: (212) 218-2200

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